

the magnification and improved illumination afforded by operating microscopes, middle cerebral artery embolectomy has experienced a resurgence. However, results seem to indicate that perhaps the STA-MCA bypass may be a more acceptable method of treatment in these cases.

STEVEN GIANNOTTA, MD

REFERENCES

Samson DS, Boone S: Extracranial-intracranial (EC-IC) arterial bypass: Past performance and current concepts. *Neurosurgery* 3:79-86, Jul-Aug 1978

Sundt TM Jr, Whisnant JP, Piegras DG, et al: Intracranial bypass grafts for vertebral-basilar ischemia. *Mayo Clin Proc* 53:12-18, Jan 1978

Occult Spinal Dysraphism: Early and Accurate Diagnosis

OCCULT SPINAL DYSRAPHISM is a spectrum of congenital malformations that encompasses congenital dermal sinus, the tethered cord syndrome, lumbosacral lipoma and lipomyelomeningocele, diastematomyelia and other less frequent entities. Hallmarks of the condition are the low position of the conus medullaris below the second lumbar vertebra due to tethering by embryologically misplaced tissues and a posterior spina bifida. Traction on the tethered cord and occasionally compression by the abnormal tissue can produce one or more features of the neuromusculoskeletal syndrome or orthopedic syndrome, as termed by James and Lassman. A unilateral pes cavus, underdeveloped foot, shorter leg with muscle weakness and atrophy, insensitive skin, as well as urinary incontinence and scoliosis may be present at birth but more commonly evolve after a period of relatively normal development. A cutaneous anomaly such as hypertrichosis, hemangiomatous discoloration, a dimple or sinus or a subcutaneous lipoma may overlie the region of the spina bifida and intraspinal pathologic condition. The general consensus is that occult spinal dysraphism is progressive once it becomes symptomatic, but stabilizes or improves following operative relief of traction and compression and that early treatment is desirable in many cases.

The diagnosis of this condition is often missed by Pantopaque myelography which usually requires a general anesthetic for children younger than seven years. However, metrizamide myelography combined with spinal computed tomography enables the diagnosis to be made easier, earlier and more accurately. Metrizamide is a water-soluble agent with a low incidence of side effects and is completely absorbed from the dural sac; and the entire

procedure is carried out under local anesthetic and sedation in all age groups. The level of the conus medullaris, the thickness of the filum terminale, the direction of caudal nerve roots as well as abnormal bands and adhesions or intraspinal filling defects are clearly displayed. Computed tomography of the metrizamide-filled dural sac details the relationships of the intraspinal structures and can identify abnormal tissues such as lipoma or cartilage on the basis of density measurements. The combined procedures yield far more information than either one done individually. Consequently, studies can be done in mildly symptomatic or even asymptomatic children with every expectation of arriving at a reliable diagnosis and treatment can be rendered before irreversible deficits develop.

BARRY N. FRENCH, MD, FRCS(C)

REFERENCES

James CCM, Lassman LP: *Spinal Dysraphism: Spina Bifida Occulta*. London, Butterworth and Company Publishers Limited, 1972

Harwood-Nash DCF, Fitz CR, Resjo IM, et al: Congenital spinal and cord lesions in children and computed tomographic metrizamide myelography. *Neuroradiology* 16:69-70, 1978

Postconcussion Syndrome

CEREBRAL CONCUSSION is a retrospective diagnosis that relates to a *transient* loss of neurologic function from which there is rapid and complete recovery without neurologic residua. It is frequently associated with a period of amnesia which relates to events immediately preceding and following the concussive event; the length of these periods of *retrograde* and *anterograde* amnesia may provide an index of the extent of the concussion. The diagnosis is established on the basis of the clinical history (transient loss of neurologic function which may or may not include unconsciousness) and absence of pathologic, chemical or radiographic findings that will either establish or invalidate the diagnosis. The presence of a concussion in itself is not a necessary harbinger of a more serious consequence in a patient's subsequent clinical course. The diagnosis of concussion simply represents clinical documentation that the extent of cerebral trauma was sufficient to transiently interrupt or disturb cerebral function.

A small but significant percentage of patients who experience a cerebral concussion as defined above will subsequently complain of recurrent headaches, dizziness, vertigo, anxiety and generalized fatigue. These symptoms, or any combination of them, have been termed the postconcussion syndrome. The process may prove to be